

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently amended) An isolated MUC1-specific binding member comprising an ~~antigen binding domain, wherein the antigen binding domain comprises a region comprising the~~ amino acid sequence of the formula:

X<sub>1</sub> X<sub>2</sub> His Thr Gly X<sub>3</sub> Gly Val Trp X<sub>4</sub> Pro X<sub>5</sub> X<sub>6</sub> X<sub>7</sub> (SEQ ID NO: 28),

wherein X<sub>1</sub> is Ala, Ser, Thr, or Val;

X<sub>2</sub> is Lys, Ile Arg, or Gln;

X<sub>3</sub> is Gly, Arg, Val, Glu, Ser, or Ala;

X<sub>4</sub> is Asp or Asn;

X<sub>5</sub> is Ile, Leu, Met, Phe, or Val;

X<sub>6</sub> is Asp, Gly, Lys, Asn, Ala, His, Arg, Ser, Val, or Tyr; and

X<sub>7</sub> is Tyr, His, Lys, Asn, Asp, Ser, Pro,

wherein the amino acid sequences is in its germline framework or is in a framework from a different polypeptide and the isolated MUC1-specific binding member binds MUC1.

2. (Currently amended) The MUC1-specific binding member according to Claim 1, wherein the ~~variable region~~ MUC1-specific binding member comprises the ~~an~~ amino acid sequence selected from the group consisting of:

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Asp Tyr (amino acids 97-110 of SEQ ID NO:3);

Ala Lys His Thr Gly Arg Gly Val Trp Asp Pro Ile Gly Tyr (SEQ ID NO:29);

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Lys His (SEQ ID NO:30);

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Gly Tyr (SEQ ID NO:31); and  
Ala Ile His Thr Gly Gly Gly Val Trp Asp Pro Ile Lys Tyr (SEQ ID NO:32).

3. (Currently Amended) An isolated MUC1-specific binding member comprising an antigen binding domain ~~comprising an antibody V<sub>L</sub> region comprising the amino acid sequence~~ of SEQ ID NO:1, ~~or portion thereof~~, and an antigen binding domain an antibody V<sub>H</sub> region ~~comprising the amino acid sequence~~ of SEQ ID NO:3, wherein the isolated MUC1-specific binding member binds MUC1, or a portion thereof.

4. (Currently amended) A MUC1-specific binding member comprising ~~an antigen binding domain, wherein the antigen binding domain comprises a CDR of an antibody V<sub>L</sub>, or V<sub>H</sub> region, wherein said CDR has~~ having an amino acid sequence selected from the group consisting of amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and conservatively substituted sequences of any of the preceding sequences, wherein the isolated MUC1-specific binding member binds MUC1, and combinations thereof.

5. (Original) The MUC1-specific binding member according to any of Claims 1, 2, 3, or 4, wherein said MUC1-specific binding member is a fusion protein.

6. (Original) The MUC1-specific binding member according to any one of Claims 1, 2, 3, or 4, further comprising a detectable label or tag.

7. (Original) The MUC1-specific binding member according to Claim 6, wherein the detectable label or tag is selected from the group consisting of epitope tags, fluorescent labels, radioactive labels, heavy metals, anti-cancer drugs, toxins, and magnetic resonance imaging labels.

8. (Original) The MUC1-specific binding member according to any one of Claims 1, 2, 3, or 4, wherein the MUC1-specific binding member is an antibody molecule selected from the group consisting of immunoglobulins, Fab antibodies, F(ab')<sub>2</sub> antibodies, diabodies, scFv antibodies, double scFv, Fv molecules, dAb, immunocytokine molecules, and immunotoxin molecules.

9. (Currently amended) The MUC1-specific ~~immunocytokine~~ binding member according to Claim 8, wherein the MUC1-specific binding member is an immunocytokine molecule and the immunocytokine molecule comprises ~~comprising the~~ an amino acid sequence of SEQ ID NO:5.

10. (Currently amended) The MUC1-specific ~~immunocytokine~~ binding member according to Claim 9, further comprising a detectable label or tag.

11. (Original) The MUC1-specific binding member according to Claim 10, wherein the detectable label or tag is selected from the group consisting of, epitope tags, fluorescent labels, radioactive labels, and magnetic resonance imaging labels.

12. (Currently amended) The MUC1-specific ~~immunoglobulin~~ binding member according to Claim 8, wherein the MUC1-specific binding member is an immunoglobulin and the immunoglobulin comprises ~~comprising~~ a light chain polypeptide comprising the amino acid sequence of SEQ ID NO:24 and a heavy chain polypeptide comprising the amino acid sequence of SEQ ID NO:26.

13. (Currently amended) The MUC1-specific ~~immunoglobulin~~ binding member according to Claim 12, further comprising a detectable label or tag.

14. (Original) The MUC1-specific binding member according to Claim 13, wherein the detectable label or tag is selected from the group consisting of enzymes, epitope tags, fluorescent labels, radioactive labels, heavy metals, anti-cancer drugs, toxins, and magnetic resonance imaging labels.

15. (Currently amended) A MUC1-specific binding member comprising ~~an antibody antigen-binding domain comprising~~ a heavy chain variable region, or CDR thereof, from the DP47 germ line wherein the MUC1-specific binding member binds MUC1.

16. (Currently amended) A MUC1-specific binding member ~~comprising an antibody antigen-binding domain comprising~~ a light chain variable region, or a CDR thereof, from the DPK15 germ line wherein the MUC1-specific binding member binds MUC1.

17. (Currently amended) A MUC1-specific binding member comprising ~~an antibody antigen-binding domain comprising~~ a heavy chain variable region, or CDR thereof, from the DP47 germ line and a light chain variable region, or CDR thereof, from the DPK15 germ line wherein the MUC1-specific binding member binds MUC1.

18. (Currently amended) A MUC1-specific binding member comprising an amino acid sequence that is about 70% or more homologous to ~~any of the~~ an amino acid sequence from the group consisting of: sequences of Claims 1, 2, 3, or 4

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Asp Tyr (amino acids 97-110 of SEQ ID NO:3);

Ala Lys His Thr Gly Arg Gly Val Trp Asp Pro Ile Gly Tyr (SEQ ID NO:29);

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Lys His (SEQ ID NO:30);

Ala Lys His Thr Gly Gly Gly Val Trp Asp Pro Ile Gly Tyr (SEQ ID NO:31);

Ala Ile His Thr Gly Gly Gly Val Trp Asp Pro Ile Lys Tyr (SEQ ID NO:32);

amino acids 24 to 39 of SEQ ID NO:1;

amino acids 55 to 61 of SEQ ID NO:1;  
amino acids 94 to 102 of SEQ ID NO:1;  
amino acids 31 to 35 of SEQ ID NO:3;  
amino acids 50 to 66 of SEQ ID NO:3; and  
amino acids 99 to 110 of SEQ ID NO:3  
wherein the MUC1-specific binding member binds MUC1.

19. (Currently amended) [[A]] The MUC1-specific binding member of claim 18,  
wherein the ~~comprising an~~ amino acid sequence that is about 80% or more homologous to  
any of the amino acid sequences of Claims 1, 2, 3, or 4.

20. (Currently amended) [[A]] The MUC1-specific binding member of claim 18,  
wherein the ~~comprising an~~ amino acid sequence that is about 90% or more homologous to any of  
the amino acid sequences of Claims 1, 2, 3, or 4.

21. (Currently amended) [[A]] The MUC1-specific binding member of claim 18,  
wherein the ~~comprising an~~ amino acid sequence that is about 95% or more homologous to any of  
the amino acid sequences of Claims 1, 2, 3, or 4.

22. (Currently amended) [[A]] The MUC1-specific binding member of claim 18,  
wherein the ~~comprising an~~ amino acid sequence that is about 97% or more homologous to any of  
the amino acid sequences of Claims 1, 2, 3, or 4.

23. (Currently amended) [[A]] The MUC1-specific binding member of claim 18,  
wherein the ~~comprising an~~ amino acid sequence that is about 99% or more homologous to any of  
the amino acid sequences of Claims 1, 2, 3, or 4.

24. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 70% or more homologous to an amino acid sequence selected from the group consisting of ~~SEQ ID NO:1~~, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, ~~SEQ ID NO:3~~, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and SEQ ID NO:5, wherein the polypeptide molecule binds MUC1.

25. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 80% or more homologous to an amino acid sequence selected from the group consisting of ~~SEQ ID NO:1~~, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, ~~SEQ ID NO:3~~, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and SEQ ID NO:5 wherein the polypeptide molecule binds MUC1.

26. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 90% or more homologous to an amino acid sequence selected from the group consisting of SEQ ID NO:1, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, SEQ ID NO:3, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO: 3, and SEQ ID NO:5, wherein the polypeptide molecule binds MUC1.

27. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 95% or more homologous to an amino acid sequence selected from the group consisting of SEQ ID NO:1, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, SEQ ID NO:3, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and SEQ ID NO:5, wherein the polypeptide molecule binds MUC1.

28. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 97% or more homologous to an amino acid sequence selected from the group consisting of SEQ ID NO:1, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, SEQ ID NO:3, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and SEQ ID NO:5, wherein the polypeptide molecule binds MUC1.

29. (Currently amended) A polypeptide molecule comprising an amino acid sequence that is about 99% or more homologous to an amino acid sequence selected from the group consisting of SEQ ID NO:1, amino acids 24 to 39 of SEQ ID NO:1, amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, SEQ ID NO:3, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and SEQ ID NO:5, wherein the polypeptide molecule binds MUC1.

30. to 69. (Cancelled)

Please add the following new claims:

70. (New) The MUC1-specific binding member of claim 4, comprising two or more CDRs of an antibody V<sub>L</sub>, or V<sub>H</sub> region, wherein the CDRs are selected from the group consisting of: amino acids 24 to 39 of SEQ ID NO:1 amino acids 55 to 61 of SEQ ID NO:1, amino acids 94 to 102 of SEQ ID NO:1, amino acids 31 to 35 of SEQ ID NO:3, amino acids 50 to 66 of SEQ ID NO:3, amino acids 99 to 110 of SEQ ID NO:3, and conservatively substituted sequences of any of the preceding sequences.

71. (New) The MUC1-specific binding member of claim 70, wherein the MUC1-specific binding member comprises at least two CDRs of the antibody V<sub>L</sub> region and at least two CDRs of the antibody V<sub>H</sub> region.

72. (New) The MUC1-specific binding member of claim 70, wherein the MUC1-binding member comprises all three CDRs of the V<sub>L</sub> region.

73. (New) The MUC-1-specific binding member of claim 70, wherein the MUC-1 binding member comprises all three CDRs of the V<sub>H</sub> region.

74. (New) The MUC1-specific binding member of claim 1, wherein the germline framework is a DP47 framework, a DPK15 framework or both.

75. (New) The isolated MUC1 specific binding member of claim 1, wherein the framework of the different polypeptide is a framework from a different germ line or a different antibody or fragments thereof.

76. (New) The isolated MUC1-specific binding member of claim 75, wherein the framework of the different polypeptide is a human framework or fragment thereof.

77. (New) The isolated MUC1-specific binding member of claim 75, wherein the framework is a framework other than a DP47 or DPK15 framework.

78. (New) The isolated MUC1-specific binding member of any of claims 3 and 4, wherein the MUC1-specific binding member is a human MUC1-specific binding member.



79. (New) The isolated MUC1-specific binding member of any of claims 1, 2, 3 and 4, wherein the MUC1-specific binding member has reduced HAMA response in humans as compared to a murine antibody.

80. (New) The polypeptide molecule according to claim 29, wherein the polypeptide molecule comprises the amino acid sequence selected from the group consisting of SEQ ID NO:1 and SEQ ID NO:3.

81. (New) The polypeptide molecule according to claim 80, wherein the polypeptide molecule comprises the amino acid sequence of SEQ ID NO:1 and SEQ ID NO:3.